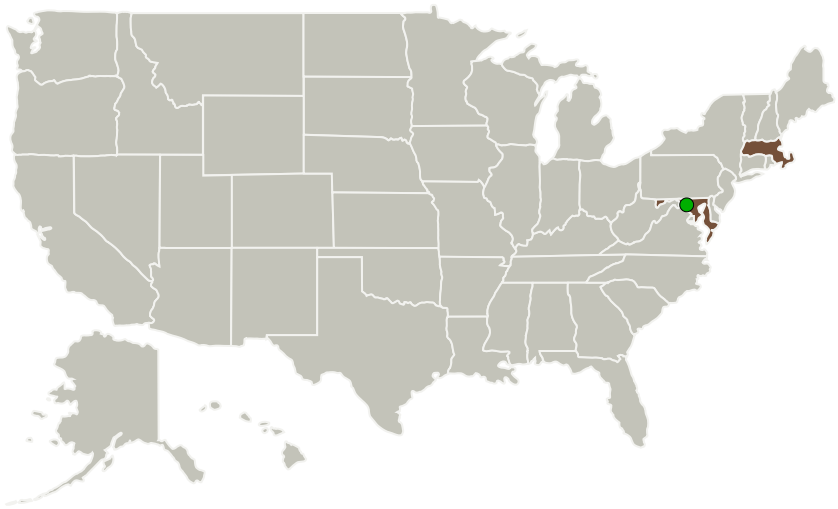
High Performance Spatial Filter Array Based on Signal Mode Fiber Bundle, Phase I

Completed Technology Project (2012 - 2012)

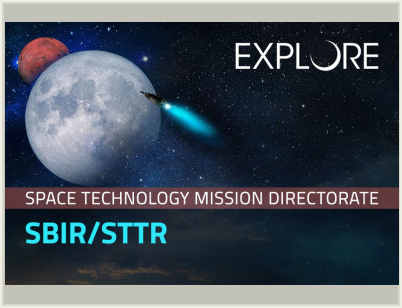
Project Introduction

Loveraging on Agiltron's experience in optical fiber components, Agiltron proposed a coherent single-mode fiber (SMF) spatial filter array (SFA) with a gradient index fiber (GIF) lens array pair to meet NASA's application of planet exploration. There are several advantages over the current approach in: small aberration, low insertion loss, high uniformity, low cost, easy assembly and high stability. In Phase I, Agiltron will build a GIF-based SFA prototype to prove the feasibility of the proposed low cost program for NASA applications. At the same time, a theoretical study will be made to build a simulation model for the proposed SFA. This simulation and actual physical testing will provide the necessary baseline for us to build and demonstrate a prototype including the mechanical enclosures in Phase II. We expect to provide fully functional and environmentally tested production units for NASA in Phase II.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
AGILTRON Corporation	Lead Organization	Industry	Woburn, Massachusetts
Goddard Space Flight Center(GSFC)	Supporting Organization	NASA Center	Greenbelt, Maryland



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Primary U.S. Work Locations	
Maryland	Massachusetts

Project Transitions

February 2012: Project Start

August 2012: Closed out

Closeout Documentation:

- Final Summary Chart*(https://techport.nasa.gov/file/140677)*

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

AGILTRON Corporation

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

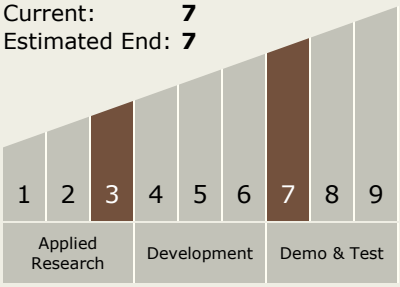
Carlos Torrez

Principal Investigator:

Peter Liu

Technology Maturity (TRL)

Start: **3**
Current: **7**
Estimated End: **7**



High Performance Spatial Filter Array Based on Signal Mode Fiber Bundle, Phase I

Completed Technology Project (2012 - 2012)

Technology Areas

Primary:

- TX08 Sensors and Instruments
  - TX08.1 Remote Sensing Instruments/Sensors
    - TX08.1.5 Lasers

Target Destinations

The Moon, Mars, Outside the Solar System, The Sun, Earth, Others Inside the Solar System